



Public health benefits of strategies to reduce greenhouse-gas emissions: Urban land transport

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Abstract:

We used Comparative Risk Assessment methods to estimate the health effects of alternative urban land transport scenarios for two settings-London, UK, and Delhi, India. For each setting, we compared a business-as-usual 2030 projection (without policies for reduction of greenhouse gases) with alternative scenarios-lower-carbon-emission motor vehicles, increased active travel, and a combination of the two. We developed separate models that linked transport scenarios with physical activity, air pollution, and risk of road traffic injury. In both cities, we noted that reduction in carbon dioxide emissions through an increase in active travel and less use of motor vehicles had larger health benefits per million population (7332 disability-adjusted life-years [DALYs] in London, and 12 516 in Delhi in 1 year) than from the increased use of lower-emission motor vehicles (160 DALYs in London, and 1696 in Delhi). However, combination of active travel and lower-emission motor vehicles would give the largest benefits (7439 DALYs in London, 12 995 in Delhi), notably from a reduction in the number of years of life lost from ischaemic heart disease (10-19% in London, 11-25% in Delhi). Although uncertainties remain, climate change mitigation in transport should benefit public health substantially. Policies to increase the acceptability, appeal, and safety of active urban travel, and discourage travel in private motor vehicles would provide larger health benefits than would policies that focus solely on lower-emission motor vehicles.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Unspecified Exposure

Air Pollution: Ozone, Particulate Matter, Other Air Pollution

Air Pollution (other): NOx

Geographic Feature:

resource focuses on specific type of geography

Urban

Climate Change and Human Health Literature Portal

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Co-Benefit/Co-Harm (Adaption/Mitigation):

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact:

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Injury, Morbidity/Mortality

Cardiovascular Effect: Other Cardiovascular Effect

Cardiovascular Disease (other): Ischemic heart disease

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Mitigation

Model/Methodology:

type of model used or methodology development is a focus of resource

Exposure Change Prediction, Outcome Change Prediction

Resource Type:

format or standard characteristic of resource

Policy/Opinion, Research Article

Timescale:

time period studied

Medium-Term (10-50 years)

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content